

D.) AMENDMENTS TO THE DRAWINGS

None.

E.) REMARKS

This Response is filed in response to the Office Action dated December 3, 2004.

Upon entry of this Response, claims 1-70 will be pending in the Application.

In the outstanding Office Action, the Examiner rejected claims 1, 2, 5-8, 10-12, 14-16, 20-22, 29-31, 33-38, 40, 41, 45-47, 56-59, and 64-66 under 35 U.S.C. 102(b) as being anticipated by Monroe et al. (U.S. Patent No. 5,527,261); rejected claims 3, 4, 19, 44, 62 and 69 under 35 U.S.C. § 103(a) as being unpatentable over Monroe et al. (U.S. Patent No. 5,527,261) in view of Takahashi et al. (U.S. Patent No. 6,753,901); rejected claims 9, 32 and 54 under 35 U.S.C. § 103(a) as being unpatentable over Monroe et al. (U.S. Patent No. 5,527,261) in view of D'Alfonso et al. (U.S. Patent No. 5,896,166); rejected claims 13 and 39 under 35 U.S.C. § 103(a) as being unpatentable over Monroe et al. (U.S. Patent No. 5,527,261) in view of Ooshima et al. (U.S. Patent No. 6,190,309); rejected claims 23, 24, 48, 55, 60 and 67 under 35 U.S.C. § 103(a) as being unpatentable over Monroe et al. (U.S. Patent No. 5,527,261) in view of Williams et al. (U.S. Patent No. 5,124,797); rejected claims 26-28, 50-53, 63 and 70 under 35 U.S.C. § 103(a) as being unpatentable over Monroe et al. (U.S. Patent No. 5,527,261) in view of Cooper (U.S. Patent No. 5,702,249); objected to claim 15; and indicated claims 17, 18, 25, 42, 43, 49, 61 and 68 as having allowable subject matter.

Rejection under 35 U.S.C. 102

The Examiner rejected claims 1, 2, 5-8, 10-12, 14-16, 20-22, 29-31, 33-38, 40, 41, 45-47, 56-59, and 64-66 under 35 U.S.C. 102(b) as being anticipated by Monroe et al. (U.S. Patent No. 5,527,261), hereinafter referred to as "Monroe."

Specifically, the Examiner stated that

Re claim 1, Monroe et al discloses a dental imaging system (fig. 1), comprising:

- a handpiece (10) including a handle portion (12 & 14, col. 3, lines 24-27) and a distal end portion (18, col. 3, lines 27-32), said distal end portion having a view port (24, also fig. 2) for viewing intra- and extra-oral dental anatomy (col. 4, lines 16-49, col. 5, lines 28-44);
- an optical system mounted in said distal end portion of said handpiece, said optical system being configured to acquire, orient and transmit an image of said dental anatomy appearing in said view port (fig. 2: 72-83, col. 4, lines 18-29);
- a sensor assembly mounted in said distal end of said handpiece, said sensor assembly being configured to convert images received through said optical system into video digital signals (fig. 2: 68, col. 4, lines 16-18, col. 5, lines 8-14);
- a camera control unit mounted in said handle portion of said handpiece, said camera control unit being configured to receive said video data signals from said sensor assembly and to generate video output signals of said image from said video data signals (col. 4, lines 10-15, col. 5, lines 10-27);
- and an interface means (fig. 1: 32) connected to said camera control unit for providing power to said camera control unit and for receiving video output signals from said camera control unit for transmission (col. 3, lines 48-50) to a device for display (52) or further processing (col. 3, lines 32-67, col. 5, lines 14-27).

Applicants respectfully traverse the rejection of claims 1, 2, 5-8, 10-12, 14-16, 20-22, 29-31, 33-38, 40, 41, 45-47, 56-59, and 64-66 under 35 U.S.C. 102(b).

Monroe, as understood, is directed to a remote hand-held diagnostic instrument with video imaging capability, and transmitter means for remotely transmitting and receiving a video signal. The hand-held diagnostic instrument is provided with a casing or housing that has a hand-holdable body portion, a neck portion that extends forward from one end of the body portion, and a head portion situated on the distal end of the neck portion. A solid-state imager, such as a CCD chip, is carried in a head member in the head portion. A focusing lens assembly is carried in a front cover and focuses onto the imager an image of an object in the field of view of the lens assembly. The diagnostic instrument is connected to a remote transmitter capable of being suspended from a practitioner's belt or clothing. The transmitter transmits the video signal to a remotely located video monitor equipped with a receiver.

In contrast, independent claim 1 recites a dental imaging system, comprising: a handpiece including a handle portion and a distal end portion, said distal end portion having a view port for viewing intra- and extra-oral dental anatomy; an optical system mounted in said distal end portion of said handpiece, said optical system being configured to acquire, orient and transmit an image of said dental anatomy appearing in said view port; a sensor assembly mounted in said distal end of said handpiece, said sensor assembly being configured to convert images received through said optical system into video data signals; a camera control unit mounted in said handle portion of said handpiece, said camera control unit being configured to receive said video data signals from said sensor assembly and to generate video output signals of said image from said video data signals; a connector disposed in said handpiece to flexibly interconnect said camera control unit with said sensor assembly, wherein said connector is configured to permit axial adjustment of said sensor assembly for focusing on said dental anatomy; and an interface means connected to said camera control unit for providing power to said camera control unit and for receiving video output signals from said camera control unit for transmission to a device for display or further processing.

Independent claim 29 recites a camera handpiece for a dental imaging system, said camera handpiece comprising: a housing including a handle portion and a distal end portion, said distal end portion having a view port for viewing intra- and extra-oral dental anatomy; an optical system mounted in said distal end portion of said housing, said optical system being configured to acquire and transmit an image of said dental anatomy appearing in said view port; a sensor assembly mounted in said distal end of said housing, said sensor assembly being configured to convert images received through said optical system into video data signals; a camera control unit mounted in said handle portion of said housing, said camera control unit being configured to receive said video data signals from said sensor assembly and to generate video output signals of said image from said received video data signals; a connector disposed in said housing to flexibly interconnect said camera control unit with said sensor assembly, wherein said connector is configured to permit axial adjustment of said sensor assembly for focusing on said dental anatomy; and an interface means connected to said camera control unit for providing

power to said camera control unit and for receiving video output signals from said camera control unit for transmission to a device for display or further processing.

Independent claim 56 recites a dental imaging system, comprising: a handpiece including a handle portion and a distal end portion, said distal end portion having a view port for viewing intra- and extra-oral dental anatomy; an optical system mounted in said distal end portion of said handpiece, said optical system being configured to acquire, orient and transmit an image of said dental anatomy appearing in said view port; a sensor assembly mounted in said distal end of said handpiece, said sensor assembly being configured to convert images received through said optical system into video data signals; a camera control unit mounted in said handle portion of said handpiece, said camera control unit being configured to receive said video data signals from said sensor assembly and to generate video output signals of said image from said video data signals; a connector disposed in said handpiece to flexibly interconnect said camera control unit with said sensor assembly, wherein said connector is configured to permit axial adjustment of said sensor assembly for focusing on said dental anatomy; and a docking station connected to said camera control unit, said docking station being configured to provide power and control signals to said camera control unit and to receive video output signals from said camera control unit for display or further processing.

Independent claim 64 recites a camera handpiece for a dental imaging system, said camera handpiece comprising: a housing including a handle portion and a distal end portion, said distal end portion having a view port for viewing intra- and extra-oral dental anatomy; an optical system mounted in said distal end portion of said housing, said optical system being configured to acquire and transmit an image of said dental anatomy appearing in said view port; a sensor assembly mounted in said distal end of said housing, said sensor assembly being configured to convert images received through said optical system into video data signals; a camera control unit mounted in said handle portion of said housing, said camera control unit being configured to receive said video data signals from said sensor assembly and to generate video output signals of said image from said received video data signals; a cable interface to connect a utility cable to said camera handpiece; and a connector to flexibly interconnect said

camera control unit with said sensor assembly, wherein said connector is configured to permit axial adjustment of said sensor assembly for focusing on said dental anatomy.

The examiner is reminded that “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.’ *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).” See Manual of Patent Examining Procedure, 8th Edition (MPEP), Section 2131.

In addition, “[t]he identical invention must be shown in as complete detail as is contained in the ... claim.’ *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).” See MPEP § 2131.

Several of the features recited by Applicant in independent claims 1, 29, 56 and 64 are not taught or suggested by Monroe. First, Monroe does not teach or suggest a connector to flexibly interconnect said camera control unit with said sensor assembly, wherein said connector is configured to permit axial adjustment of said sensor assembly for focusing on said dental anatomy as recited by Applicant in independent claims 1, 29, 56 and 64. To begin, imager chip 68 of Monroe does not move when the focal length is to be changed in Monroe, but, in fact, it is the lens assembly (e.g., lens cell 24) of Monroe that is moved to adjust the focal length in Monroe. Specifically, “the lens assembly includes a dual stage manually actuated mechanism for adjusting the focal length.” See Monroe, column 2, lines 36-37. In addition, while Monroe has a flexible circuit board 64 connecting the head board 66, which includes the imager chip, to other circuit boards 62, there is nothing in Monroe that would teach or suggest that the flexible circuit board permits the head board, or imager chip, to be moved axially as recited by Applicant in independent claims 1, 29, 56 and 64. Furthermore, it would seem impossible for the imager chip of Monroe to move axially because if the imager chip was moved axially it would then be out of alignment with the lens assembly and would not operate properly. Thus, since Monroe does not teach or suggest all of the limitations recited in independent claims 1, 29, 56 and 64, Applicant respectfully submits that Monroe does not anticipate Applicant's invention as recited in independent claims 1, 29, 56 and 64.

Therefore, for the reasons given above, independent claims 1, 29, 56 and 64 are believed to be distinguishable from Monroe and therefore are not anticipated nor rendered obvious by Monroe.

Dependent claims 2, 5-8, 10-12, 14-16, 20-22, 30, 31, 33-38, 40, 41, 45-47, 57-59, 65 and 66 are believed to be allowable as depending from what are believed to be allowable independent claims 1, 29, 56 and 64 for the reasons given above. In addition, claims 2, 5-8, 10-12, 14-16, 20-22, 30, 31, 33-38, 40, 41, 45-47, 57-59, 65 and 66 recite further limitations that distinguish over the applied art. In conclusion, it is respectfully submitted that claims 1, 2, 5-8, 10-12, 14-16, 20-22, 29-31, 33-38, 40, 41, 45-47, 56-59, and 64-66 are not anticipated nor rendered obvious by Monroe and are therefore allowable.

REJECTION UNDER 35 U.S.C. 103

A. Rejection of claims 3, 4, 19, 44, 62 and 69

The Examiner rejected claims 3, 4, 19, 44, 62 and 69 under 35 U.S.C. § 103(a) as being unpatentable over Monroe in view of Takahashi et al. (U.S. Patent No. 6,753,901), hereafter referred to as “Takahashi.”

Applicants respectfully traverse the rejection of claims 3, 4, 19, 44, 62 and 69 under 35 U.S.C. § 103(a).

Monroe is directed to a remote hand-held diagnostic instrument with video imaging capability as discussed in greater detail above.

Takahashi, as understood, is directed to a video signal processing device connectable to an endoscope.

Applicant submits that dependent claims 3, 4, 19, 44, 62 and 69 are distinguishable from Monroe and/or Takahashi for at least the following reasons. To begin, dependent claims 3, 4, 19, 44, 62 and 69 are believed to be distinguishable from Monroe and/or Takahashi as depending from what are believed to be allowable independent claims 1, 29, 56 and 64 as discussed above. Furthermore, there is nothing in Takahashi that teaches or suggests any of the limitations in independent claims 1, 29, 56 and 64 not taught or suggested by Monroe.

Therefore, in view of the above, dependent claims 3, 4, 19, 44, 62 and 69 are believed to be distinguishable from Monroe and/or Takahashi and therefore are not anticipated nor rendered

obvious by Monroe and/or Takahashi. In addition, claims 3, 4, 19, 44, 62 and 69 recite further limitations that distinguish over the applied art. In conclusion, it is respectfully submitted that claims 3, 4, 19, 44, 62 and 69 are not anticipated nor rendered obvious by Monroe and/or Takahashi and are therefore allowable.

B. Rejection of claims 9, 32 and 54

The Examiner rejected claims 9, 32 and 54 under 35 U.S.C. § 103(a) as being unpatentable over Monroe in view of D'Alfonso et al. (U.S. Patent No. 5,896,166), hereafter referred to as "D'Alfonso."

Applicants respectfully traverse the rejection of claims 9, 32 and 54 under 35 U.S.C. § 103(a).

Monroe is directed to a remote hand-held diagnostic instrument with video imaging capability as discussed in greater detail above.

D'Alfonso, as understood, is directed to a remote CCD video camera.

Applicant submits that dependent claims 9, 32 and 54 are distinguishable from Monroe and/or D'Alfonso for at least the following reasons. To begin, dependent claims 9, 32 and 54 are believed to be distinguishable from Monroe and/or D'Alfonso as depending from what are believed to be allowable independent claims 1 and 29 as discussed above. Furthermore, there is nothing in D'Alfonso that teaches or suggests any of the limitations in independent claims 1 and 29 not taught or suggested by Monroe.

Therefore, in view of the above, dependent claims 9, 32 and 54 are believed to be distinguishable from Monroe and/or D'Alfonso and therefore are not anticipated nor rendered obvious by Monroe and/or D'Alfonso. In addition, claims 9, 32 and 54 recite further limitations that distinguish over the applied art. In conclusion, it is respectfully submitted that claims 9, 32 and 54 are not anticipated nor rendered obvious by Monroe and/or D'Alfonso and are therefore allowable.

C. Rejection of claims claims 13 and 39

The Examiner rejected claims 13 and 39 under 35 U.S.C. § 103(a) as being unpatentable over Monroe in view of Ooshima et al. (U.S. Patent No. 6,190,309), hereafter referred to as "Ooshima."

Applicants respectfully traverse the rejection of claims 13 and 39 under 35 U.S.C. § 103(a).

Monroe is directed to a remote hand-held diagnostic instrument with video imaging capability as discussed in greater detail above.

Ooshima, as understood, is directed to a video scope and portable accommodation case.

Applicant submits that dependent claims 13 and 39 are distinguishable from Monroe and/or Ooshima for at least the following reasons. To begin, dependent claims 13 and 39 are believed to be distinguishable from Monroe and/or Ooshima as depending from what are believed to be allowable independent claims 1 and 29 as discussed above. Furthermore, there is nothing in Ooshima that teaches or suggests any of the limitations in independent claims 1 and 29 not taught or suggested by Monroe.

Therefore, in view of the above, dependent claims 13 and 39 are believed to be distinguishable from Monroe and/or Ooshima and therefore are not anticipated nor rendered obvious by Monroe and/or Ooshima. In addition, claims 13 and 39 recite further limitations that distinguish over the applied art. In conclusion, it is respectfully submitted that claims 13 and 39 are not anticipated nor rendered obvious by Monroe and/or Ooshima and are therefore allowable.

D. Rejection of claims 23, 24, 48, 55, 60 and 67

The Examiner rejected claims 23, 24, 48, 55, 60 and 67 under 35 U.S.C. § 103(a) as being unpatentable over Monroe in view of Williams et al. (U.S. Patent No. 5,124,79), hereafter referred to as “Williams.”

Applicants respectfully traverse the rejection of claims 23, 24, 48, 55, 60 and 67 under 35 U.S.C. § 103(a).

Monroe is directed to a remote hand-held diagnostic instrument with video imaging capability as discussed in greater detail above.

Williams, as understood, is directed to a modular view lens attachment for micro video imaging camera.

Applicant submits that dependent claims 23, 24, 48, 55, 60 and 67 are distinguishable from Monroe and/or Williams for at least the following reasons. To begin, dependent claims 23, 24, 48, 55, 60 and 67 are believed to be distinguishable from Monroe and/or Williams as

depending from what are believed to be allowable independent claims 1, 29, 56 and 64 as discussed above. Furthermore, there is nothing in Williams that teaches or suggests any of the limitations in independent claims 1, 29, 56 and 64 not taught or suggested by Monroe.

Therefore, in view of the above, dependent claims 23, 24, 48, 55, 60 and 67 are believed to be distinguishable from Monroe and/or Williams and therefore are not anticipated nor rendered obvious by Monroe and/or Williams. In addition, claims 23, 24, 48, 55, 60 and 67 recite further limitations that distinguish over the applied art. In conclusion, it is respectfully submitted that claims 23, 24, 48, 55, 60 and 67 are not anticipated nor rendered obvious by Monroe and/or Williams and are therefore allowable.

E. Rejection of claims 26-28, 50-53, 63 and 70

The Examiner rejected claims 26-28, 50-53, 63 and 70 under 35 U.S.C. § 103(a) as being unpatentable over Monroe in view of Cooper (U.S. Patent No. 5,702,249), hereafter referred to as "Cooper."

Applicants respectfully traverse the rejection of claims 26-28, 50-53, 63 and 70 under 35 U.S.C. § 103(a).

Monroe is directed to a remote hand-held diagnostic instrument with video imaging capability as discussed in greater detail above.

Cooper, as understood, is directed to a modular intra-oral imaging system video camera.

Applicant submits that dependent claims 26-28, 50-53, 63 and 70 are distinguishable from Monroe and/or Cooper for at least the following reasons. To begin, dependent claims 26-28, 50-53, 63 and 70 are believed to be distinguishable from Monroe and/or Cooper as depending from what are believed to be allowable independent claims 1, 29, 56 and 64 as discussed above. Furthermore, there is nothing in Cooper that teaches or suggests any of the limitations in independent claims 1, 29, 56 and 64 not taught or suggested by Monroe.

Therefore, in view of the above, dependent claims 26-28, 50-53, 63 and 70 are believed to be distinguishable from Monroe and/or Cooper and therefore are not anticipated nor rendered obvious by Monroe and/or Cooper. In addition, claims 26-28, 50-53, 63 and 70 recite further limitations that distinguish over the applied art. In conclusion, it is respectfully submitted that

claims 26-28, 50-53, 63 and 70 are not anticipated nor rendered obvious by Monroe and/or Cooper and are therefore allowable.

Allowable Subject Matter

The Examiner objected to claims 17, 18, 25, 42, 43, 49, 61 and 68 as being dependent upon a rejected base claim, but indicated that the claims would be allowable, if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant appreciates the Examiner's indication of allowable subject matter, but believes that all of the claims are allowable for the reasons given above.

Objection to the Claims

The Examiner objected to claim 15 for an informality in the claim. In response thereto, applicant has amended claim 15 to remove the duplicate words in a manner believed to overcome the objection.

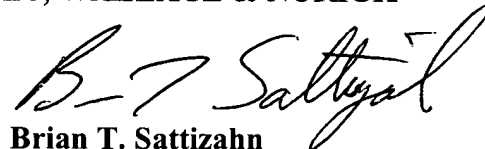
CONCLUSION

In view of the above, Applicant respectfully requests reconsideration of the Application and withdrawal of the outstanding objections and rejections. As a result of the amendments and remarks presented herein, Applicant respectfully submits that claims 1-70 are not anticipated by nor rendered obvious by Monroe, Takahashi, D'Alfonso, Ooshima, Williams, Cooper or their combination and thus, are in condition for allowance. As the claims are not anticipated by nor rendered obvious in view of the applied art, Applicant requests allowance of claims 1-70 in a timely manner. If the Examiner believes that prosecution of this Application could be expedited by a telephone conference, the Examiner is encouraged to contact the Applicant.

The Commissioner is hereby authorized to charge any additional fees and credit any overpayments to Deposit Account No. 50-1059.

Respectfully submitted,
McNEES, WALLACE & NURICK

By

A handwritten signature in black ink, appearing to read "B-T Sattizahn", written over the printed name.

Brian T. Sattizahn

Reg. No. 46,401

100 Pine Street, P.O. Box 1166

Harrisburg, PA 17108-1166

Tel: (717) 237-5258

Fax: (717) 237-5300

Dated: March 3, 2005